

WHAT IS CLAIMED IS:

1 1. A method of producing a carpet in tile or roll form using an open
2 mesh fiber reinforced foam layer with foam nodules comprising the steps
3 of:

4 (a) producing a carpet in tile or roll form having a primary backing
5 through which carpet fiber bundles are tufted and a precoat locking the
6 tufts in place to prevent easy extraction of individual fibers, so that a
7 tufted fiber face and relatively smooth opposite back face are provided;

(b) bringing the open mesh fiber/reinforced foam layer with foam nodules into intimate contact with the relatively smooth back face; and

10 (c) adhering the open mesh fiber reinforced foam layer with foam

11 nodules in contact with the relatively smooth back face to provide a carpet
12 tile or roll that is substantially prevented from curling or doming, or curling
13 or doming is significantly reduced, and may be installed without adhesive

14 if desired.

1 2. A method as recited in claim 1 wherein step (c) is practiced by
2 applying a non-fused adhesive formulation to the relatively smooth back
3 face, and then after step (b), fusing the adhesive at a temperature low
4 enough to prevent the collapse of the ~~preformed~~ foam nodules of the
5 open mesh fiber reinforced foam layer.

1 3. A method as recited in claim 2 wherein step (c) is practiced by
2 exposing the adhesive with attached open mesh fiber reinforced foam
3 layer with foam nodules to a maximum fusing temperature of about
4 310°F.

1 4. A method as recited in claim 3 wherein step (c) is further
2 practiced by applying as the adhesive formulation a formulation
3 comprising:

4 PVC Copolymer 100 parts
5 Plasticizer 50-100 parts
6 Filler 0-200 parts
7 Silicone surfactant 0-4 parts
8 Fumed silica 0-2 parts.

1 5. A method as recited in claim 4 wherein step (c) is further
2 practiced by applying as the adhesive formulation about 25-150 parts
3 filler, sufficient silicone surfactant to provide a formulation density below
4 50 pounds per cubic foot, and sufficient fumed silica to provide a
5 formulation Brookfield viscosity of about 30,000 - 60,000 centipoise at a
6 spindle speed of 2 rpm.

1 6. A method as recited in claim 5 wherein step (c) is further
2 practiced by applying a formulation consisting essentially of PVC
3 copolymer, plasticizer, filler, silicone surfactant, and fumed silica.

1 7. A method as recited in claim 1 wherein step (c) is practiced by
2 practicing step (a) using a fusion oven, and so that the relatively smooth
3 face of the backing has fluid properties as it emerges from the fusion
4 oven; and wherein step (b) is practiced by forcing the open mesh fiber
5 reinforced foam layer with foam nodules into intimate contact with the still
6 fluid portion of relatively smooth back face so that the hot melt backing at

7 least partially envelops the foam nodules to provide a substantially instant
8 bond.

1 8. A method as recited in claim 7 wherein step (c) is further
2 practiced by providing as at least part of the carpet back a formulation
3 comprising:

4 PVC resin with a K value of 62-75 100 parts

5 Plasticizer 60-100 parts

6 Filler 0-250 parts,

7 and substantially devoid of blowing agent.

1 9. A method as recited in claim 7 wherein step (c) is further
2 practiced by providing as part of the carpet back face PVC resin having a
3 K value between 62-75, and substantially devoid of blowing agent.

1 10. A method as recited in claim 7 comprising the further step of
2 cooling the carpet with open mesh fiber reinforced foam layer with foam
3 nodules backing.

1 11. A method as recited in claim 2 wherein step (a) is further
2 practiced to provide a reinforcing scrim as part of the carpet adjacent the
3 relatively smooth back face.

1 12. A method as recited in claim 7 wherein step (a) is further
2 practiced to provide a reinforcing scrim as part of the carpet adjacent the
3 relatively smooth back face.

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1 13. A carpet tile comprising:
2 a primary backing having carpet fiber bundles tufted therethrough,
3 the fibers bundles providing a tufted face;
4 a precoat locking the tufts in place to prevent easy extraction of
5 individual fibers and providing a relatively smooth back face opposite the
6 tufted face,
7 a reinforcing scrim adjacent the relatively smooth back face and
8 held in place at least in part by said precoat; and
9 an open mesh fiber reinforced foam layer with foam nodules held
10 in substantially intimate contact with the relatively smooth back face.

1 14. A carpet tile as recited in claim 13 wherein said open mesh
2 fiber reinforced foam layer with foam nodules is held in substantially
3 intimate contact with the relatively smooth back face by a fused adhesive.

1 15. A carpet tile as recited in claim 14 wherein said fused
2 adhesive comprises a formulation comprising:
3 PVC Copolymer 100 parts
4 Plasticizer 50-100 parts
5 Filler 0-200 parts
6 a sufficient amount of silicone surfactant to provide a formulation
7 density below 50 pounds per cubic foot, and
8 a sufficient amount of fumed silica to provide a formulation
9 pre-fusing Brookfield viscosity of about 30,000 - 60,000 centipoise at a
10 spindle speed of 2 rpm.

1 16. A carpet tile as recited in claim 13 wherein said open mesh
2 fiber reinforced foam layer with foam nodules is held in substantially
3 intimate contact with the relatively smooth back face by a formulation of
4 said back face comprising:

5 PVC resin with a K value of 62-75 100 parts
6 Plasticizer 60-100 parts
7 Filler 0-250 parts,
8 and substantially devoid of blowing agent.

1 17. A carpet roll comprising:

2 a primary backing having carpet fiber bundles tufted therethrough,

3 the fibers bundles providing a tufted face;

4 a precoat locking the tufts in place to prevent easy extraction of

5 individual fibers and providing a relatively smooth back face opposite the

6 tufted face; and

7 an open mesh fiber reinforced foam layer with foam nodules held

8 in substantially intimate contact with the relatively smooth back face.

1 18. A carpet roll as recited in claim 17 wherein said open mesh
2 fiber reinforced foam layer with foam nodules is held in substantially
3 intimate contact with the relatively smooth back face by a fused adhesive.

1 19. A carpet roll as recited in claim 18 wherein said fused
2 adhesive comprises a formulation comprising:
3 PVC Copolymer 100 parts
4 Plasticizer 50-100 parts
5 Filler 0-200 parts

6 a sufficient amount of silicone surfactant to provide a formulation
7 density below 50 pounds per cubic foot, and
8 a sufficient amount of fumed silica to provide a formulation
9 pre-fusing Brookfield viscosity of about 30,000 - 60,000 centipoise at a
10 spindle speed of 2 rpm.

1 20. A carpet roll as recited in claim 17 wherein said open mesh
2 fiber reinforced foam layer with foam nodules is held in substantially
3 intimate contact with the relatively smooth back face by a formulation of
4 said back face comprising:
5 PVC resin with a K value of 62-75 100 parts
6 Plasticizer 60-100 parts
7 Filler 0-250 parts,
8 and substantially devoid of blowing agent.

- 1 21. A carpet tile or roll made by practicing steps (a)-(c) of claim 4.
1 22. A carpet tile or roll made by practising steps (a)-(c) of claim 7.